Abstract Submitted
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**Investigation of 124Xe nuclear structure with the 8Pi spectrometer at TRIUMF-ISAC** ALLISON RADICH, P. GARRETT, B. JIGMEDDORJ, J. MICHETTI-WILSON, A. DIAZ VARELA, B. HADINIA, L. BIANCO, J. WONG, S. CHAGNON-LESSARD, R. DUNLOP, P. FINLAY, A. LAFFOLEY, K.G. LEACH, E. RAND, C. SUMITHRARACHCHI, C.E. SVENNSON, University of Guelph, J.L. WOOD, Georgia Institute of Technology, S.W. YATES, University of Kentucky, C. ANDREOIU, K. STAROSTA, D. CROSS, Simon Fraser University, A.B. GARNSWORTHY, G. HACKMAN, G. BALL, S. TRIAMBAK, TRIUMF — The 124Xe nucleus has been thought to obey O(6) symmetry but a recent Coulomb excitation study has found that while O(5) may be preserved, O(6) appears to be badly broken [1]. To further characterize the structure of this nucleus, a beta-decay experiment was performed at the TRIUMF-ISAC facility. A beam of radioactive 124Cs at a rate of 9.8x$10^7$ ions/s was implanted at the center of the 8Pi spectrometer where it underwent $\beta+$/EC decay into stable 124Xe. High-statistics gamma-gamma coincidence measurements have been analyzed to add to the level scheme of 124Xe, which has been extended considerably. The high statistics data set has revealed a new decay branch from a 124Cs high-spin isomer as well as several very-weak transitions between low-spin states in 124Xe. Branching ratios and B(E2) transition strengths have been calculated for the updated level scheme. The results will be important in determining collective properties and nuclear structure of the 124Xe.

[1] G. Rainovski et al. Physics Letters B 683 (2010) 11

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